

REMARKS

Favorable reconsideration is respectfully requested in light of the following remarks, wherein Claims 1, 7 and 10 are amended, and new Claims 13-15 are added to the application. Currently, Claims 1-15 are pending.

As an initial matter, Applicant expresses gratitude to Examiner Kong for the courtesies granted Applicant's attorney during the recent interview. During the interview, certain amendments to Claims 1, 7, and 10 were discussed, which amendments the Examiner agreed appeared to define the claims over the applied references. As a result, Applicant is amending Claims 1, 7 and 10 consistent with that agreement.

Claims 1-4 and 7-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,164,648 to *Kita et al.*, in view of U.S. Patent No. 4,885,690 to *Schmill et al.* Claims 2, 10 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kita et al.*, in view of *Schmill et al.*, and further in view of U.S. Patent No. 6,450,281 to *Kohler et al.* Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kita et al.*, in view of *Schmill et al.*, and further in view of JP 63-308611 to *Kanazawa et al.* Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kita et al.*, in view of *Schmill et al.*, and further in view of U.S. Patent No. 3,068,716 to *Dyke*.

Independent Claim 1 recites a method of stopping an unmanned mine vehicle in a predetermined position, the mine vehicle being controlled by means of a control system comprising at least a first control unit in the mine vehicle, a second control unit outside the mine vehicle and a data transmission connection between said control units, and the method comprising: driving the mine vehicle, controlled by said control system, towards a

predetermined position; monitoring at least a speed of the mine vehicle and a speed of the driving power transmission of the mine vehicle, driving the mine vehicle at a speed significantly lower than a normal driving speed and driving intentionally against at least one physical stationary obstacle that is arranged in a predetermined position; and stopping a driving power of the mine vehicle when a ratio of the speed of the driving power transmission to the speed of the mine vehicle exceeds a predetermined limit value.

Independent Claim 1 is amended to clarify that the mine vehicle is driven intentionally against at least one physical stationary obstacle and that a driving power of the mine vehicle is stopped. Independent Claims 7 and 10 are amended to clarify similar features.

According to the Examiner, *Kita et al.* discloses a system and method for stopping an unmanned mine vehicle in a *predetermined* position. The Examiner refers to column 5, lines 13-34. However, there is no mention concerning the stated stopping in a predetermined position. In contrast, *Kita et al.* discloses a system wherein a plurality of self-propelled trucks is driven on the same rails and the aim is to avoid their collision. There is no need to stop these trucks to any predetermined position on the rails.

To avoid the collision between the trucks on the same rail, the distance between the trucks is determined. Based on the distance, the driving speeds of the trucks are controlled, column 1, lines 58-65 and column 9, lines 55-65. Further, on column 5, lines 35-40 of *Kita et al.*, it is mentioned that the distance between the trucks is arranged constant whereby the collision is prevented. As such, *Kita et al.* has nothing to do with trucks being driven against any physical obstacle. Nevertheless, Applicants are amending independent Claims 1, 7, and 10 to clarify that the vehicle is driven against the obstacle on purpose, intentionally.

Moreover, it appears that the Examiner is equating the a first (front) truck driven on the rail as a physical obstacle against which a second (rear) truck driven on the same rail can collide. However, the front truck, if considered to be the physical obstacle, is not arranged in a predetermined position, but instead it moves along the rail. Nevertheless, independent Claims 1, 7, and 10 are amended to recite that the physical obstacle is stationary. *Kita et al.* fails to disclose that the physical object is stationary.

Schimmel fails to make up for the foregoing deficiencies of *Kita et al.* The Examiner states that *Schimmel* discloses means for stopping a mine vehicle when a ratio of the speed of the driving power transmission to the speed of the mining vehicle exceeds a predetermined limit value. The Examiner refers to column 4, lines 40-61 of *Schimmel*. However, there is no explicit support in *Schimmel* regarding stopping the vehicle on the basis of the sensed speeds.

In contrast, *Schimmel* discloses a system for optimizing driving parameters of a utility vehicle such as a farming tractor. The driving parameters are optimized either to influence the vehicle fuel use or work output per unit time, column 1, lines 10-16 and column 3, lines 29-30 of *Schimmel*. In practice, the system only informs the operator to use a right transmission gear, column 4, lines 34-37, column 4, lines 51-53, and column 5, lines 58-68 of *Schimmel*. Thus, *Schimmel* teaches only a gear selection aid.

Finally, the combination would not lead to the present invention, since neither of these documents discloses that a vehicle is driven on purpose against a physical obstacle whose location is known. Accordingly, neither *Kita et al.* nor *Schimmel*, in combination or alone, disclose the patentable features of independent Claims 1 and 7.

Independent Claim 10 is rejected over *Kita et al.* and *Schimmel*, and further in view of *Kohler*. However, *Kohler* does not make up for the foregoing deficiencies of *Kita et al.* and *Schimmel*.

Kohler discloses only a normal tire slip system for controlling a slip quantity of the tires. When the tire slip is sensed the system uses a torque intervention or a braking intervention to avoid tire slippage, column 5, lines 3-6 of *Kohler*. The torque intervention and the braking intervention are carried out for ensuring traction of the vehicle, as is normal in the anti-slip systems.

The Examiner states on page 4, item 5, that *Kohler* discloses stopping the mine vehicle based on sensed traction wheel speed. This is not true since nowhere in *Kohler* is mentioned that the vehicle is stopped, but instead the breaking is only used to prevent the tire to slip. Moreover, since the purpose of the anti-slippage system is to improve traction of the vehicle, it would be illogical to stop the driving power of the vehicle.

Nevertheless, like *Kita et al.* and *Schimmel*, *Kohler* fails to disclose a vehicle is driven on purpose against a physical obstacle whose location is known. Accordingly, neither *Kita et al.*, nor *Schimmel*, nor *Kohler*, in combination or alone, disclose the patentable features of independent Claim 10.

For at least the foregoing reasons, it is submitted that the system and method of independent Claims 1, 7, and 10, and the claims depending therefrom, define patentable subject matter over the applied documents. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, it is respectfully requested that the undersigned be contacted at the number indicated below.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0573. This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,

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